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#### ANALYTICAL RESULTS

Prepared by:

Prepared for:

Lancaster Laboratories 2425 New Holland Pike Lancaster, PA 17605-2425 SUN: Aquaterra Tech. PO Box 744 West Chester PA 19381

May 10, 2011

Project: SUN: Philadelphia Refinery AOI-10

Submittal Date: 04/28/2011 Group Number: 1244429 PO Number: PHILADELPHIA State of Sample Origin: PA

Client Comple Description	I anaestar I aks (I I I) #
Client Sample Description W-16 04272011 Grab Water	<u>Lancaster Labs (LLI) #</u> 6271518
<del>-</del>	6271518
W-17_04272011 Grab Water	3_,
W-19_04272011 Grab Water	6271520
W-20_04272011 Grab Water	6271521
W-22_04272011 Grab Water	6271522
W-23_04272011 Grab Water	6271523
W-32_04272011 Grab Water	6271524
W-32D_04272011 Grab Water	6271525
W-33_04272011 Grab Water	6271526
W-1_04272011 Grab Water	6271527
W-34_04272011 Grab Water	6271528
W-5 04262011 Grab Water	6271529
W-9 04262011 Grab Water	6271530
W-15_04262011 Grab Water	6271531
W-25_04262011 Grab Water	6271532
W-26_04262011 Grab Water	6271533
W-27_04262011 Grab Water	6271534
W-30_04262011 Grab Water	6271535
W-2_04262011 Grab Water	6271536
W-6_04262011 Grab Water	6271537
W-11_04262011 Grab Water	6271538
W-12_04262011 Grab Water	6271539
W-13 04262011 Grab Water	6271540
W-1D 04262011 Grab Water	6271541
W-28 04262011 Grab Water	6271542
W-29 04262011 Grab Water	6271543
W-31 04262011 Grab Water	6271544
51_0.262011 Glub Water	02/13/11



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The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC Langan Attn: Dennis Webster

COPY TO

ELECTRONIC SUN: Aquaterra Tech. Attn: Tiffani Doerr

COPY TO

ELECTRONIC LLI Attn: EDD Group

COPY TO

ELECTRONIC Langan Attn: Kristen Ward

COPY TO

ELECTRONIC Aquaterra Tech Attn: Loretta Belfiglio

COPY TO

Questions? Contact your Client Services Representative Jessica A Oknefski at (717) 656-2300 Ext. 1815

Respectfully Submitted,

lad Moline

Chad A. Moline Group Leader



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Sample Description: W-16 04272011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-16\_04272011

LLI Sample # WW 6271518 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/27/2011 12:20 by SS SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

#### A1016

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10943	Benzene		71-43-2	0.6 J	0.5	1	1
10943	1,2-Dichloroethane		107-06-2	N.D.	0.5	1	1
10943	Ethylbenzene		100-41-4	N.D.	0.5	1	1
10943	Isopropylbenzene		98-82-8	26	0.5	2	1
10943	Methyl Tertiary But	yl Ether	1634-04-4	N.D.	0.5	1	1
10943	Toluene		108-88-3	N.D.	0.5	1	1
10943	1,2,4-Trimethylbenze	ene	95-63-6	N.D.	0.5	2	1
10943	1,3,5-Trimethylbenze	ene	108-67-8	N.D.	0.5	2	1
10943	Xylene (Total)		1330-20-7	0.6 J	0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Chrysene		218-01-9	N.D.	1	5	1
07805	Fluorene		86-73-7	N.D.	1	5	1
07805	Naphthalene		91-20-3	N.D.	1	5	1
07805	Phenanthrene		85-01-8	N.D.	1	5	1
07805	Pyrene		129-00-0	N.D.	1	5	1
GC Mis	scellaneous	SW-846	8011	ug/l	ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.	0.0095	0.028	1
Metals	s Dissolved	SW-846	6020	mg/l	mg/l	mg/l	
06035	Lead		7439-92-1	0.00018 J	0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals.

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111193AA	04/30/2011	05:01	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111193AA	04/30/2011	05:01	Kevin A Sposito	1
07805	PAHs by 8270	SW-846 8270C	1	11119WAA026	05/01/2011	23:34	Linda M	1
							Hartenstine	
07807	BNA Water Extraction	SW-846 3510C	1	11119WAA026	04/30/2011	09:20	Joseph S Feister	1
07879	EDB in Wastewater	SW-846 8011	1	111220024A	05/04/2011	03:47	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111220024A	05/03/2011	10:15	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111226050002A	05/04/2011	12:36	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	111226050002	05/03/2011	08:53	Denise K Conners	1



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Sample Description: W-17 04272011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-17\_04272011

LLI Sample # WW 6271519 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/27/2011 12:10 by SS SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

#### A1017

CAT No.	Analysis Name		CAS Number	As Re Resul	ceived t	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l	ug/l	
10943	Benzene		71-43-2	0.9	J	0.5	1	1
10943	1,2-Dichloroethane		107-06-2	N.D.		0.5	1	1
10943	Ethylbenzene		100-41-4	0.6	J	0.5	1	1
10943	Isopropylbenzene		98-82-8	43		0.5	2	1
10943	Methyl Tertiary But	yl Ether	1634-04-4	N.D.		0.5	1	1
10943	Toluene		108-88-3	N.D.		0.5	1	1
10943	1,2,4-Trimethylbenze	ene	95-63-6	0.9	J	0.5	2	1
10943	1,3,5-Trimethylbenze	ene	108-67-8	N.D.		0.5	2	1
10943	Xylene (Total)		1330-20-7	3		0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l		ug/l	ug/l	
07805	Chrysene		218-01-9	N.D.		1	5	1
07805	Fluorene		86-73-7	N.D.		1	5	1
07805	Naphthalene		91-20-3	N.D.		1	5	1
07805	Phenanthrene		85-01-8	N.D.		1	5	1
07805	Pyrene		129-00-0	1	J	1	5	1
GC Mis	scellaneous	SW-846	8011	ug/l		ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.		0.0094	0.028	1
Metals	s Dissolved	SW-846	6020	mg/l		mg/l	mg/l	
06035	Lead		7439-92-1	0.000	084 J	0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals. Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111193AA	04/30/2011	05:28	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111193AA	04/30/2011	05:28	Kevin A Sposito	1
07805	PAHs by 8270	SW-846 8270C	1	11119WAA026	05/01/2011	23:59	Linda M	1
							Hartenstine	
07807	BNA Water Extraction	SW-846 3510C	1	11119WAA026	04/30/2011	09:20	Joseph S Feister	1
07879	EDB in Wastewater	SW-846 8011	1	111220024A	05/04/2011	04:47	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111220024A	05/03/2011	10:15	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111226050002A	05/04/2011	12:38	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	111226050002	05/03/2011	08:53	Denise K Conners	1



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Sample Description: W-19 04272011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-19\_04272011

LLI Sample # WW 6271520 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/27/2011 09:35 by SS SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

A1019

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10943	Benzene		71-43-2	N.D.	0.5	1	1
10943	1,2-Dichloroethane		107-06-2	N.D.	0.5	1	1
10943	Ethylbenzene		100-41-4	N.D.	0.5	1	1
10943	Isopropylbenzene		98-82-8	N.D.	0.5	2	1
10943	Methyl Tertiary But	yl Ether	1634-04-4	N.D.	0.5	1	1
10943	Toluene		108-88-3	N.D.	0.5	1	1
10943	1,2,4-Trimethylbenze	ene	95-63-6	N.D.	0.5	2	1
10943	1,3,5-Trimethylbenze	ene	108-67-8	N.D.	0.5	2	1
10943	Xylene (Total)		1330-20-7	N.D.	0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Chrysene		218-01-9	N.D.	0.9	5	1
07805	Fluorene		86-73-7	N.D.	0.9	5	1
07805	Naphthalene		91-20-3	N.D.	0.9	5	1
07805	Phenanthrene		85-01-8	N.D.	0.9	5	1
07805	Pyrene		129-00-0	N.D.	0.9	5	1
GC Mis	scellaneous	SW-846	8011	ug/l	ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.	0.0095	0.028	1
Metals	s Dissolved	SW-846	6020	mg/l	mg/l	mg/l	
06035	Lead		7439-92-1	N.D.	0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals. Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tim	ıe.	Analyst	Dilution Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111193AA	04/30/2011	05:56	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111193AA	04/30/2011	05:56	Kevin A Sposito	1
07805	PAHs by 8270	SW-846 8270C	1	11119WAA026	05/02/2011	00:23	Linda M	1
							Hartenstine	
07807	BNA Water Extraction	SW-846 3510C	1	11119WAA026	04/30/2011	09:20	Joseph S Feister	1
07879	EDB in Wastewater	SW-846 8011	1	111220024A	05/04/2011	05:48	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111220024A	05/03/2011	10:15	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111226050002A	05/04/2011	12:44	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	111226050002	05/03/2011	08:53	Denise K Conners	1



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Sample Description: W-20 04272011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-20\_04272011

LLI Sample # WW 6271521 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/27/2011 09:10 by SS SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

#### A1020

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10943	Benzene		71-43-2	N.D.	0.5	1	1
10943	1,2-Dichloroethane		107-06-2	N.D.	0.5	1	1
10943	Ethylbenzene		100-41-4	N.D.	0.5	1	1
10943	Isopropylbenzene		98-82-8	N.D.	0.5	2	1
10943	Methyl Tertiary Buty	/l Ether	1634-04-4	N.D.	0.5	1	1
10943	Toluene		108-88-3	N.D.	0.5	1	1
10943	1,2,4-Trimethylbenze	ene	95-63-6	N.D.	0.5	2	1
10943	1,3,5-Trimethylbenze	ene	108-67-8	N.D.	0.5	2	1
10943	Xylene (Total)		1330-20-7	N.D.	0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Chrysene		218-01-9	N.D.	1	5	1
07805	Fluorene		86-73-7	N.D.	1	5	1
07805	Naphthalene		91-20-3	N.D.	1	5	1
07805	Phenanthrene		85-01-8	N.D.	1	5	1
07805	Pyrene		129-00-0	N.D.	1	5	1
GC Mis	scellaneous	SW-846	8011	ug/l	ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.	0.0095	0.028	1
Metals	s Dissolved	SW-846	6020	mg/l	mg/l	mg/l	
06035	Lead		7439-92-1	0.0032	0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals.

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111193AA	04/30/2011	06:24	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111193AA	04/30/2011	06:24	Kevin A Sposito	1
07805	PAHs by 8270	SW-846 8270C	1	11119WAA026	05/02/2011	00:47	Linda M	1
							Hartenstine	
07807	BNA Water Extraction	SW-846 3510C	1	11119WAA026	04/30/2011	09:20	Joseph S Feister	1
07879	EDB in Wastewater	SW-846 8011	1	111220024A	05/04/2011	06:18	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111220024A	05/03/2011	10:15	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111226050002A	05/04/2011	12:46	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	111226050002	05/03/2011	08:53	Denise K Conners	1



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Sample Description: W-22 04272011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-22\_04272011

LLI Sample # WW 6271522 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/27/2011 10:40 by SS SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

#### A1022

CAT No.	Analysis Name		CAS Number	As Re Resul	ceived t	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l	ug/l	
10943	Benzene		71-43-2	N.D.		0.5	1	1
10943	1,2-Dichloroethane		107-06-2	N.D.		0.5	1	1
10943	Ethylbenzene		100-41-4	N.D.		0.5	1	1
10943	Isopropylbenzene		98-82-8	N.D.		0.5	2	1
10943	Methyl Tertiary But	yl Ether	1634-04-4	N.D.		0.5	1	1
10943	Toluene		108-88-3	N.D.		0.5	1	1
10943	1,2,4-Trimethylbenze	ene	95-63-6	N.D.		0.5	2	1
10943	1,3,5-Trimethylbenze	ene	108-67-8	N.D.		0.5	2	1
10943	Xylene (Total)		1330-20-7	N.D.		0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l		ug/l	ug/l	
07805	Chrysene		218-01-9	1	J	1	5	1
07805	Fluorene		86-73-7	1	J	1	5	1
07805	Naphthalene		91-20-3	N.D.		1	5	1
07805	Phenanthrene		85-01-8	N.D.		1	5	1
07805	Pyrene		129-00-0	2	J	1	5	1
GC Mis	scellaneous	SW-846	8011	ug/l		ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.		0.0095	0.029	1
Metals	s Dissolved	SW-846	6020	mg/l		mg/l	mg/l	
06035	Lead		7439-92-1	0.000	20 J	0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals. Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Δ	Analyst	Dilution Factor
								ractor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111193AA	04/30/2011	06:52	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111193AA	04/30/2011	06:52	Kevin A Sposito	1
07805	PAHs by 8270	SW-846 8270C	1	11120WAF026	05/03/2011	09:59	Brian K Graham	1
07807	BNA Water Extraction	SW-846 3510C	1	11120WAF026	05/02/2011	09:15	Cynthia J	1
							Salvatori	
07879	EDB in Wastewater	SW-846 8011	1	111220024A	05/04/2011	06:48	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111220024A	05/03/2011	10:15	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111226050002A	05/04/2011	12:48	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	111226050002	05/03/2011	08:53	Denise K Conners	1



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Sample Description: W-23 04272011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-23\_04272011

LLI Sample # WW 6271523 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/27/2011 10:50 by SS SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

A1023

CAT No.	Analysis Name		CAS Number	As Re Resul	ceived t	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l	ug/l	
10943	Benzene		71-43-2	12		0.5	1	1
10943	1,2-Dichloroethane		107-06-2	N.D.		0.5	1	1
10943	Ethylbenzene		100-41-4	1		0.5	1	1
10943	Isopropylbenzene		98-82-8	1	J	0.5	2	1
10943	Methyl Tertiary But	yl Ether	1634-04-4	N.D.		0.5	1	1
10943	Toluene		108-88-3	2		0.5	1	1
10943	1,2,4-Trimethylbenze	ene	95-63-6	8		0.5	2	1
10943	1,3,5-Trimethylbenze	ene	108-67-8	2		0.5	2	1
10943	Xylene (Total)		1330-20-7	13		0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l		ug/l	ug/l	
07805	Chrysene		218-01-9	N.D.		1	5	1
07805	Fluorene		86-73-7	1	J	1	5	1
07805	Naphthalene		91-20-3	3	J	1	5	1
07805	Phenanthrene		85-01-8	N.D.		1	5	1
07805	Pyrene		129-00-0	N.D.		1	5	1
GC Mis	scellaneous	SW-846	8011	ug/l		ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.		0.0095	0.028	1
Metals	s Dissolved	SW-846	6020	mg/l		mg/l	mg/l	
06035	Lead		7439-92-1	N.D.		0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals.

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT	Analysis Name	Method	Trial#	Batch#	Analysis		Analyst	Dilution
No.					Date and Ti	me		Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111193AA	04/30/2011	07:20	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111193AA	04/30/2011	07:20	Kevin A Sposito	1
07805	PAHs by 8270	SW-846 8270C	1	11120WAF026	05/03/2011	10:25	Brian K Graham	1
07807	BNA Water Extraction	SW-846 3510C	1	11120WAF026	05/02/2011	09:15	Cynthia J	1
							Salvatori	
07879	EDB in Wastewater	SW-846 8011	1	111220024A	05/04/2011	08:18	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111220024A	05/03/2011	10:15	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111226050002A	05/04/2011	12:49	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A	1	111226050002	05/03/2011	08:53	Denise K Conners	1
		modified						



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Sample Description: W-32 04272011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-32\_04272011

LLI Sample # WW 6271524 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/27/2011 13:00 by SS SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

A1032

CAT No.	Analysis Name		CAS Number	As Re Resul	eceived Lt	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l	ug/l	
10943	Benzene		71-43-2	56		0.5	1	1
10943	1,2-Dichloroethane		107-06-2	2		0.5	1	1
10943	Ethylbenzene		100-41-4	1		0.5	1	1
10943	Isopropylbenzene		98-82-8	8		0.5	2	1
10943	Methyl Tertiary But	yl Ether	1634-04-4	N.D.		0.5	1	1
10943	Toluene		108-88-3	1		0.5	1	1
10943	1,2,4-Trimethylbenze	ene	95-63-6	6		0.5	2	1
10943	1,3,5-Trimethylbenze	ene	108-67-8	1	J	0.5	2	1
10943	Xylene (Total)		1330-20-7	4		0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l		ug/l	ug/l	
07805	Chrysene		218-01-9	4	J	1	5	1
07805	Fluorene		86-73-7	12		1	5	1
07805	Naphthalene		91-20-3	24		1	5	1
07805	Phenanthrene		85-01-8	13		1	5	1
07805	Pyrene		129-00-0	6		1	5	1
GC Mis	scellaneous	SW-846	8011	ug/l		ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.		0.0094	0.028	1
Metals	s Dissolved	SW-846	6020	mg/l		mg/l	mg/l	
06035	Lead		7439-92-1	0.000	)37 J	0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals.

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT	Analysis Name	Method	Trial#	Batch#	Analysis		Analyst	Dilution
No.					Date and Ti	me		Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111194AA	04/29/2011	22:15	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111194AA	04/29/2011	22:15	Kevin A Sposito	1
07805	PAHs by 8270	SW-846 8270C	1	11120WAF026	05/03/2011	10:50	Brian K Graham	1
07807	BNA Water Extraction	SW-846 3510C	1	11120WAF026	05/02/2011	09:15	Cynthia J	1
							Salvatori	
07879	EDB in Wastewater	SW-846 8011	1	111220024A	05/04/2011	08:49	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111220024A	05/03/2011	10:15	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111226050002A	05/04/2011	12:51	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A	1	111226050002	05/03/2011	08:53	Denise K Conners	1
		modified						



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Sample Description: W-32D 04272011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-32D\_04272011

LLI Sample # WW 6271525 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/27/2011 13:20 by SS SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

#### A102D

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10943	Benzene		71-43-2	N.D.	0.5	1	1
10943	1,2-Dichloroethane		107-06-2	N.D.	0.5	1	1
10943	Ethylbenzene		100-41-4	N.D.	0.5	1	1
10943	Isopropylbenzene		98-82-8	N.D.	0.5	2	1
10943	Methyl Tertiary But	yl Ether	1634-04-4	N.D.	0.5	1	1
10943	Toluene		108-88-3	N.D.	0.5	1	1
10943	1,2,4-Trimethylbenze	ene	95-63-6	N.D.	0.5	2	1
10943	1,3,5-Trimethylbenze	ene	108-67-8	N.D.	0.5	2	1
10943	Xylene (Total)		1330-20-7	N.D.	0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Chrysene		218-01-9	N.D.	10	50	1
07805	Fluorene		86-73-7	N.D.	10	50	1
07805	Naphthalene		91-20-3	N.D.	10	50	1
07805	Phenanthrene		85-01-8	N.D.	10	50	1
07805	Pyrene		129-00-0	N.D.	10	50	1
Repo	rting limits were rai	lsed due t	to interference fro	om the sample ma	atrix.		
GC Mis	scellaneous	SW-846	8011	ug/l	ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.	0.0094	0.028	1
Metals	s Dissolved	SW-846	6020	mg/l	mg/l	mg/l	
06035	Lead		7439-92-1	N.D.	0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals.

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tim	ne	Analyst	Dilution Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111194AA	04/29/2011	22:43	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111194AA	04/29/2011	22:43	Kevin A Sposito	1
07805	PAHs by 8270	SW-846 8270C	1	11124WAB026	05/05/2011	14:34	Brian K Graham	1
07807	BNA Water Extraction	SW-846 3510C	2	11124WAB026	05/04/2011	17:00	Timothy J	1
							Attenberger	
07879	EDB in Wastewater	SW-846 8011	1	111220024A	05/04/2011	09:19	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111220024A	05/03/2011	10:15	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111226050002A	05/04/2011	12:53	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	111226050002	05/03/2011	08:53	Denise K Conners	1



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Sample Description: W-33 04272011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-33\_04272011

LLI Sample # WW 6271526 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/27/2011 11:00 by SS SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

A1033

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10943	Benzene		71-43-2	250	5	10	10
10943	1,2-Dichloroethane		107-06-2	N.D.	5	10	10
10943	Ethylbenzene		100-41-4	13	5	10	10
10943	Isopropylbenzene		98-82-8	N.D.	5	20	10
10943	Methyl Tertiary But	yl Ether	1634-04-4	N.D.	5	10	10
10943	Toluene		108-88-3	60	5	10	10
10943	1,2,4-Trimethylbenz	ene	95-63-6	36	5	20	10
10943	1,3,5-Trimethylbenz	ene	108-67-8	11 J	5	20	10
10943	Xylene (Total)		1330-20-7	70	5	10	10
Repo	rting limits were rai	ised due t	to sample foaming.				
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Chrysene		218-01-9	6	1	5	1
07805	Fluorene		86-73-7	36	1	5	1
07805	Naphthalene		91-20-3	330	5	24	5
07805	Phenanthrene		85-01-8	66	1	5	1
07805	Pyrene		129-00-0	16	1	5	1
GC Mis	scellaneous	SW-846	8011	ug/l	ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.	0.0094	0.028	1
Metals	s Dissolved	SW-846	6020	mg/l	mg/l	mg/l	
06035	Lead		7439-92-1	0.000068 J	0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals.

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	D111232AA	05/03/2011 21:16	Daniel H Heller	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	D111232AA	05/03/2011 21:16	Daniel H Heller	10
07805	PAHs by 8270	SW-846 8270C	1	11120WAF026	05/03/2011 11:40	Brian K Graham	1
07805	PAHs by 8270	SW-846 8270C	1	11120WAF026	05/03/2011 14:21	Linda M Hartenstine	5
07807	BNA Water Extraction	SW-846 3510C	1	11120WAF026	05/02/2011 09:15	Cynthia J Salvatori	1
07879	EDB in Wastewater	SW-846 8011	1	111220024A	05/04/2011 09:49	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111220024A	05/03/2011 10:15	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111226050002A	05/04/2011 12:55	Choon Y Tian	1



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Sample Description: W-33 04272011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-33\_04272011

LLI Sample # WW 6271526 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/27/2011 11:00 by SS SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

A1033

#### Laboratory Sample Analysis Record

CAT Analysis Name Method Trial# Batch# Analysis Analysis Dilution
No.

06050 ICP/MS SW-846 Water Digest SW-846 3010A 1 111226050002 05/03/2011 08:53 Denise K Conners 1
modified



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Sample Description: W-1 04272011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-1\_04272011

LLI Sample # WW 6271527 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/27/2011 14:30 by SS SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

#### A1001

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10943	Benzene		71-43-2	N.D.	0.5	1	1
10943	1,2-Dichloroethane		107-06-2	N.D.	0.5	1	1
10943	Ethylbenzene		100-41-4	N.D.	0.5	1	1
10943	Isopropylbenzene		98-82-8	N.D.	0.5	2	1
10943	Methyl Tertiary But	yl Ether	1634-04-4	2	0.5	1	1
10943	Toluene		108-88-3	N.D.	0.5	1	1
10943	1,2,4-Trimethylbenze	ene	95-63-6	N.D.	0.5	2	1
10943	1,3,5-Trimethylbenze	ene	108-67-8	N.D.	0.5	2	1
10943	Xylene (Total)		1330-20-7	N.D.	0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Chrysene		218-01-9	20	1	5	1
07805	Fluorene		86-73-7	13	1	5	1
07805	Naphthalene		91-20-3	N.D.	1	5	1
07805	Phenanthrene		85-01-8	13	1	5	1
07805	Pyrene		129-00-0	37	1	5	1
GC Mis	scellaneous	SW-846	8011	ug/l	ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.	0.0095	0.028	1
Metals	s Dissolved	SW-846	6020	mg/l	mg/l	mg/l	
06035	Lead		7439-92-1	N.D.	0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals. Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT	Analysis Name	Method	Trial#	Batch#	Analysis		Analyst	Dilution
No.					Date and Ti	me		Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111194AA	04/29/2011	23:11	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111194AA	04/29/2011	23:11	Kevin A Sposito	1
07805	PAHs by 8270	SW-846 8270C	1	11120WAF026	05/03/2011	12:05	Brian K Graham	1
07807	BNA Water Extraction	SW-846 3510C	1	11120WAF026	05/02/2011	09:15	Cynthia J	1
							Salvatori	
07879	EDB in Wastewater	SW-846 8011	1	111220024A	05/04/2011	10:19	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111220024A	05/03/2011	10:15	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111226050002A	05/04/2011	12:58	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A	1	111226050002	05/03/2011	08:53	Denise K Conners	1
		modified						



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Sample Description: W-34 04272011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-34\_04272011

LLI Sample # WW 6271528 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/27/2011 10:20 by SS SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

#### A1034

CAT No.	Analysis Name		CAS Number	As Re Resul	ceived t	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l	ug/l	
10943	Benzene		71-43-2	7		0.5	1	1
10943	1,2-Dichloroethane		107-06-2	N.D.		0.5	1	1
10943	Ethylbenzene		100-41-4	2		0.5	1	1
10943	Isopropylbenzene		98-82-8	1	J	0.5	2	1
10943	Methyl Tertiary Buty	yl Ether	1634-04-4	N.D.		0.5	1	1
10943	Toluene		108-88-3	11		0.5	1	1
10943	1,2,4-Trimethylbenze	ene	95-63-6	9		0.5	2	1
10943	1,3,5-Trimethylbenze	ene	108-67-8	2		0.5	2	1
10943	Xylene (Total)		1330-20-7	19		0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l		ug/l	ug/l	
07805	Chrysene		218-01-9	N.D.		1	5	1
07805	Fluorene		86-73-7	5	J	1	5	1
07805	Naphthalene		91-20-3	11		1	5	1
07805	Phenanthrene		85-01-8	10		1	5	1
07805	Pyrene		129-00-0	1	J	1	5	1
GC Mis	scellaneous	SW-846	8011	ug/l		ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.		0.0095	0.028	1
Metals	s Dissolved	SW-846	6020	mg/l		mg/l	mg/l	
06035	Lead		7439-92-1	N.D.		0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals.

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111194AA	04/29/2011 23	3:39	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111194AA	04/29/2011 23	3:39	Kevin A Sposito	1
07805	PAHs by 8270	SW-846 8270C	1	11120WAF026	05/03/2011 12	2:30	Brian K Graham	1
07807	BNA Water Extraction	SW-846 3510C	1	11120WAF026	05/02/2011 09	9:15	Cynthia J Salvatori	1
07879	EDB in Wastewater	SW-846 8011	1	111220024A	05/04/2011 10	0:49	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111220024A	05/03/2011 10	0:15	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111226050002A	05/04/2011 12	2:59	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	111226050002	05/03/2011 08	8:53	Denise K Conners	1



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Sample Description: W-5 04262011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-5\_04262011

LLI Sample # WW 6271529 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/26/2011 11:50 by SS SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

A1005

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10943	Benzene		71-43-2	N.D.	0.5	1	1
10943	1,2-Dichloroethane		107-06-2	N.D.	0.5	1	1
10943	Ethylbenzene		100-41-4	N.D.	0.5	1	1
10943	Isopropylbenzene		98-82-8	N.D.	0.5	2	1
10943	Methyl Tertiary But	yl Ether	1634-04-4	3	0.5	1	1
10943	Toluene		108-88-3	N.D.	0.5	1	1
10943	1,2,4-Trimethylbenze	ene	95-63-6	N.D.	0.5	2	1
10943	1,3,5-Trimethylbenze	ene	108-67-8	N.D.	0.5	2	1
10943	Xylene (Total)		1330-20-7	N.D.	0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Chrysene		218-01-9	N.D.	1	5	1
07805	Fluorene		86-73-7	N.D.	1	5	1
07805	Naphthalene		91-20-3	N.D.	1	5	1
07805	Phenanthrene		85-01-8	N.D.	1	5	1
07805	Pyrene		129-00-0	N.D.	1	5	1
GC Mis	scellaneous	SW-846	8011	ug/l	ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.	0.0095	0.029	1
Metals	B Dissolved	SW-846	6020	mg/l	mg/l	mg/l	
06035	Lead		7439-92-1	N.D.	0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals.

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT	Analysis Name	Method	Trial#	Batch#	Analysis		Analyst	Dilution
No.					Date and Ti	me		Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111262AA	05/06/2011	18:45	Nicholas R Rossi	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111262AA	05/06/2011	18:45	Nicholas R Rossi	1
07805	PAHs by 8270	SW-846 8270C	1	11119WAA026	05/02/2011	01:11	Linda M	1
							Hartenstine	
07807	BNA Water Extraction	SW-846 3510C	1	11119WAA026	04/30/2011	09:20	Joseph S Feister	1
07879	EDB in Wastewater	SW-846 8011	1	111220024A	05/04/2011	11:19	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111220024A	05/03/2011	10:15	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111226050002A	05/04/2011	13:01	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A	1	111226050002	05/03/2011	08:53	Denise K Conners	1
		modified						



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Sample Description: W-9 04262011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-9\_04262011

LLI Sample # WW 6271530 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/26/2011 10:40 by SS SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

#### A1009

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10943	Benzene		71-43-2	N.D.	0.5	1	1
10943	1,2-Dichloroethane		107-06-2	N.D.	0.5	1	1
10943	Ethylbenzene		100-41-4	N.D.	0.5	1	1
10943	Isopropylbenzene		98-82-8	N.D.	0.5	2	1
10943	Methyl Tertiary But	yl Ether	1634-04-4	N.D.	0.5	1	1
10943	Toluene		108-88-3	N.D.	0.5	1	1
10943	1,2,4-Trimethylbenze	ene	95-63-6	N.D.	0.5	2	1
10943	1,3,5-Trimethylbenze	ene	108-67-8	N.D.	0.5	2	1
10943	Xylene (Total)		1330-20-7	N.D.	0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Chrysene		218-01-9	N.D.	1	5	1
07805	Fluorene		86-73-7	N.D.	1	5	1
07805	Naphthalene		91-20-3	N.D.	1	5	1
07805	Phenanthrene		85-01-8	N.D.	1	5	1
07805	Pyrene		129-00-0	N.D.	1	5	1
GC Mis	scellaneous	SW-846	8011	ug/l	ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.	0.0094	0.028	1
Metals	s Dissolved	SW-846	6020	mg/l	mg/l	mg/l	
06035	Lead		7439-92-1	N.D.	0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals.

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tim	ne	Analyst	Dilution Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111194AA	04/30/2011	00:35	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111194AA	04/30/2011	00:35	Kevin A Sposito	1
07805	PAHs by 8270	SW-846 8270C	1	11119WAA026	05/02/2011	01:36	Linda M	1
							Hartenstine	
07807	BNA Water Extraction	SW-846 3510C	1	11119WAA026	04/30/2011	09:20	Joseph S Feister	1
07879	EDB in Wastewater	SW-846 8011	1	111220024A	05/04/2011	11:49	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111220024A	05/03/2011	10:15	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111226050002A	05/04/2011	13:07	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	111226050002	05/03/2011	08:53	Denise K Conners	1



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Sample Description: W-15 04262011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-15 04262011

LLI Sample # WW 6271531 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/26/2011 12:25 by SS SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

#### A1015

CAT No.	Analysis Name		CAS Number	As Receive Result	As Received d Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10943	Benzene		71-43-2	N.D.	0.5	1	1
10943	1,2-Dichloroethane		107-06-2	N.D.	0.5	1	1
10943	Ethylbenzene		100-41-4	N.D.	0.5	1	1
10943	Isopropylbenzene		98-82-8	N.D.	0.5	2	1
10943	Methyl Tertiary But	yl Ether	1634-04-4	N.D.	0.5	1	1
10943	Toluene		108-88-3	0.8 J	0.5	1	1
10943	1,2,4-Trimethylbenz		95-63-6	N.D.	0.5	2	1
10943	1,3,5-Trimethylbenz	ene	108-67-8	N.D.	0.5	2	1
10943	Xylene (Total)		1330-20-7	N.D.	0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Chrysene		218-01-9	1 J	1	5	1
07805	Fluorene		86-73-7	N.D.	1	5	1
07805	Naphthalene		91-20-3	N.D.	1	5	1
07805	Phenanthrene		85-01-8	N.D.	1	5	1
07805	Pyrene		129-00-0	2 J	1	5	1
GC Mis	scellaneous	SW-846	8011	ug/l	ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.	0.0094	0.028	1
Metals	Dissolved	SW-846	6020	mg/l	mg/l	mg/l	
06035	Lead		7439-92-1	0.00096 J	0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals. Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality

Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tim	ne	Analyst	Dilution Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111262AA	05/06/2011	19:13	Nicholas R Rossi	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111262AA	05/06/2011	19:13	Nicholas R Rossi	1
07805	PAHs by 8270	SW-846 8270C	1	11119WAA026	05/02/2011	02:00	Linda M	1
							Hartenstine	
07807	BNA Water Extraction	SW-846 3510C	1	11119WAA026	04/30/2011	09:20	Joseph S Feister	1
07879	EDB in Wastewater	SW-846 8011	1	111220024A	05/04/2011	12:19	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111220024A	05/03/2011	10:15	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111226050002A	05/04/2011	13:09	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	111226050002	05/03/2011	08:53	Denise K Conners	1



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Sample Description: W-25 04262011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-25\_04262011 LLI Sample # WW 6271532 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/26/2011 13:55 by SS SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

#### A1025

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10943	Benzene		71-43-2	N.D.	0.5	1	1
10943	1,2-Dichloroethane		107-06-2	N.D.	0.5	1	1
10943	Ethylbenzene		100-41-4	N.D.	0.5	1	1
10943	Isopropylbenzene		98-82-8	N.D.	0.5	2	1
10943	Methyl Tertiary But	yl Ether	1634-04-4	N.D.	0.5	1	1
10943	Toluene		108-88-3	N.D.	0.5	1	1
10943	1,2,4-Trimethylbenze	ene	95-63-6	N.D.	0.5	2	1
10943	1,3,5-Trimethylbenze	ene	108-67-8	N.D.	0.5	2	1
10943	Xylene (Total)		1330-20-7	N.D.	0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Chrysene		218-01-9	N.D.	1	5	1
07805	Fluorene		86-73-7	N.D.	1	5	1
07805	Naphthalene		91-20-3	N.D.	1	5	1
07805	Phenanthrene		85-01-8	N.D.	1	5	1
07805	Pyrene		129-00-0	N.D.	1	5	1
GC Mis	scellaneous	SW-846	8011	ug/l	ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.	0.0094	0.028	1
Metals	s Dissolved	SW-846	6020	mg/l	mg/l	mg/l	
06035	Lead		7439-92-1	N.D.	0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals. Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tim	ne	Analyst	Dilution Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111194AA	04/30/2011	01:31	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111194AA	04/30/2011	01:31	Kevin A Sposito	1
07805	PAHs by 8270	SW-846 8270C	1	11119WAA026	05/02/2011	02:24	Linda M	1
							Hartenstine	
07807	BNA Water Extraction	SW-846 3510C	1	11119WAA026	04/30/2011	09:20	Joseph S Feister	1
07879	EDB in Wastewater	SW-846 8011	1	111220024A	05/04/2011	12:49	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111220024A	05/03/2011	10:15	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111226050002A	05/04/2011	13:11	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	111226050002	05/03/2011	08:53	Denise K Conners	1



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Sample Description: W-26 04262011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-26 04262011

LLI Sample # WW 6271533 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/26/2011 14:10 by SS SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

#### A1026

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10943	Benzene		71-43-2	N.D.	0.5	1	1
10943	1,2-Dichloroethane		107-06-2	N.D.	0.5	1	1
10943	Ethylbenzene		100-41-4	N.D.	0.5	1	1
10943	Isopropylbenzene		98-82-8	N.D.	0.5	2	1
10943	Methyl Tertiary But	yl Ether	1634-04-4	0.6 J	0.5	1	1
10943	Toluene		108-88-3	N.D.	0.5	1	1
10943	1,2,4-Trimethylbenz		95-63-6	N.D.	0.5	2	1
10943	1,3,5-Trimethylbenz	ene	108-67-8	N.D.	0.5	2	1
10943	Xylene (Total)		1330-20-7	N.D.	0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Chrysene		218-01-9	N.D.	1	5	1
07805	Fluorene		86-73-7	N.D.	1	5	1
07805	Naphthalene		91-20-3	N.D.	1	5	1
07805	Phenanthrene		85-01-8	N.D.	1	5	1
07805	Pyrene		129-00-0	N.D.	1	5	1
GC Mis	scellaneous	SW-846	8011	ug/l	ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.	0.0095	0.028	1
Metals	B Dissolved	SW-846	6020	mg/l	mg/l	mg/l	
06035	Lead		7439-92-1	N.D.	0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals.

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111194AA	04/30/2011	01:59	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111194AA	04/30/2011	01:59	Kevin A Sposito	1
07805	PAHs by 8270	SW-846 8270C	1	11119WAA026	05/02/2011	02:48	Linda M	1
							Hartenstine	
07807	BNA Water Extraction	SW-846 3510C	1	11119WAA026	04/30/2011	09:20	Joseph S Feister	1
07879	EDB in Wastewater	SW-846 8011	1	111220024A	05/04/2011	14:19	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111220024A	05/03/2011	10:15	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111226050002A	05/04/2011	13:13	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	111226050002	05/03/2011	08:53	Denise K Conners	1



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Sample Description: W-27 04262011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-27\_04262011

LLI Sample # WW 6271534 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/26/2011 13:10 by SS SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

A1027

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10943	Benzene		71-43-2	N.D.	0.5	1	1
10943	1,2-Dichloroethane		107-06-2	N.D.	0.5	1	1
10943	Ethylbenzene		100-41-4	N.D.	0.5	1	1
10943	Isopropylbenzene		98-82-8	N.D.	0.5	2	1
10943	Methyl Tertiary But	yl Ether	1634-04-4	N.D.	0.5	1	1
10943	Toluene		108-88-3	N.D.	0.5	1	1
10943	1,2,4-Trimethylbenze	ene	95-63-6	N.D.	0.5	2	1
10943	1,3,5-Trimethylbenze	ene	108-67-8	N.D.	0.5	2	1
10943	Xylene (Total)		1330-20-7	N.D.	0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Chrysene		218-01-9	N.D.	1	5	1
07805	Fluorene		86-73-7	N.D.	1	5	1
07805	Naphthalene		91-20-3	N.D.	1	5	1
07805	Phenanthrene		85-01-8	N.D.	1	5	1
07805	Pyrene		129-00-0	N.D.	1	5	1
GC Mis	scellaneous	SW-846	8011	ug/l	ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.	0.0095	0.028	1
Metals	B Dissolved	SW-846	6020	mg/l	mg/l	mg/l	
06035	Lead		7439-92-1	0.00011 J	0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals.

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT	Analysis Name	Method	Trial#	Batch#	Analysis		Analyst	Dilution
No.					Date and Ti	me		Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111194AA	04/30/2011	02:27	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111194AA	04/30/2011	02:27	Kevin A Sposito	1
07805	PAHs by 8270	SW-846 8270C	1	11119WAA026	05/02/2011	03:13	Linda M	1
							Hartenstine	
07807	BNA Water Extraction	SW-846 3510C	1	11119WAA026	04/30/2011	09:20	Joseph S Feister	1
07879	EDB in Wastewater	SW-846 8011	1	111220024A	05/04/2011	14:49	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111220024A	05/03/2011	10:15	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111226050002A	05/04/2011	13:15	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	111226050002	05/03/2011	08:53	Denise K Conners	1



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Sample Description: W-30 04262011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-30\_04262011

LLI Sample # WW 6271535 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/26/2011 11:25 by SS SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

A1030

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10943	Benzene		71-43-2	N.D.	0.5	1	1
10943	1,2-Dichloroethane		107-06-2	N.D.	0.5	1	1
10943	Ethylbenzene		100-41-4	N.D.	0.5	1	1
10943	Isopropylbenzene		98-82-8	N.D.	0.5	2	1
10943	Methyl Tertiary But	yl Ether	1634-04-4	N.D.	0.5	1	1
10943	Toluene		108-88-3	N.D.	0.5	1	1
10943	1,2,4-Trimethylbenze	ene	95-63-6	N.D.	0.5	2	1
10943	1,3,5-Trimethylbenze	ene	108-67-8	N.D.	0.5	2	1
10943	Xylene (Total)		1330-20-7	N.D.	0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Chrysene		218-01-9	N.D.	1	5	1
07805	Fluorene		86-73-7	N.D.	1	5	1
07805	Naphthalene		91-20-3	N.D.	1	5	1
07805	Phenanthrene		85-01-8	N.D.	1	5	1
07805	Pyrene		129-00-0	N.D.	1	5	1
GC Mis	scellaneous	SW-846	8011	ug/l	ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.	0.0094	0.028	1
Metals	B Dissolved	SW-846	6020	mg/l	mg/l	mg/l	
06035	Lead		7439-92-1	0.00013 J	0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals.

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT	Analysis Name	Method	Trial#	Batch#	Analysis		Analyst	Dilution
No.					Date and Ti	me		Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111194AA	04/30/2011	02:55	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111194AA	04/30/2011	02:55	Kevin A Sposito	1
07805	PAHs by 8270	SW-846 8270C	1	11119WAA026	05/02/2011	03:37	Linda M	1
							Hartenstine	
07807	BNA Water Extraction	SW-846 3510C	1	11119WAA026	04/30/2011	09:20	Joseph S Feister	1
07879	EDB in Wastewater	SW-846 8011	1	111220024A	05/04/2011	15:19	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111220024A	05/03/2011	10:15	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111226050002A	05/04/2011	13:16	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	111226050002	05/03/2011	08:53	Denise K Conners	1



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Sample Description: W-2 04262011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-2\_04262011

LLI Sample # WW 6271536 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/26/2011 11:25 by MH SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

#### A1002

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10943	Benzene		71-43-2	N.D.	0.5	1	1
10943	1,2-Dichloroethane		107-06-2	N.D.	0.5	1	1
10943	Ethylbenzene		100-41-4	N.D.	0.5	1	1
10943	Isopropylbenzene		98-82-8	N.D.	0.5	2	1
10943	Methyl Tertiary But	yl Ether	1634-04-4	N.D.	0.5	1	1
10943	Toluene		108-88-3	N.D.	0.5	1	1
10943	1,2,4-Trimethylbenze	ene	95-63-6	N.D.	0.5	2	1
10943	1,3,5-Trimethylbenze	ene	108-67-8	N.D.	0.5	2	1
10943	Xylene (Total)		1330-20-7	N.D.	0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Chrysene		218-01-9	N.D.	1	5	1
07805	Fluorene		86-73-7	N.D.	1	5	1
07805	Naphthalene		91-20-3	N.D.	1	5	1
07805	Phenanthrene		85-01-8	N.D.	1	5	1
07805	Pyrene		129-00-0	N.D.	1	5	1
GC Mis	scellaneous	SW-846	8011	ug/l	ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.	0.0095	0.029	1
Metals	s Dissolved	SW-846	6020	mg/l	mg/l	mg/l	
06035	Lead		7439-92-1	N.D.	0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals. Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	•	Analyst	Dilution Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111194AA	04/30/2011 0	3:23	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111194AA	04/30/2011 0	3:23	Kevin A Sposito	1
07805	PAHs by 8270	SW-846 8270C	1	11119WAA026	05/02/2011 0	4:01	Linda M	1
							Hartenstine	
07807	BNA Water Extraction	SW-846 3510C	1	11119WAA026	04/30/2011 0	9:20	Joseph S Feister	1
07879	EDB in Wastewater	SW-846 8011	1	111220024A	05/04/2011 1	5:49	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111220024A	05/03/2011 1	0:15	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111226050002A	05/04/2011 1	3:18	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	111226050002	05/03/2011 0	8:53	Denise K Conners	1



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Sample Description: W-6 04262011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-6 04262011

LLI Sample # WW 6271537 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/26/2011 12:45 by MH SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

#### A1006

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10943	Benzene		71-43-2	N.D.	0.5	1	1
10943	1,2-Dichloroethane		107-06-2	N.D.	0.5	1	1
10943	Ethylbenzene		100-41-4	N.D.	0.5	1	1
10943	Isopropylbenzene		98-82-8	N.D.	0.5	2	1
10943	Methyl Tertiary But	yl Ether	1634-04-4	N.D.	0.5	1	1
10943	Toluene		108-88-3	N.D.	0.5	1	1
10943	1,2,4-Trimethylbenze	ene	95-63-6	N.D.	0.5	2	1
10943	1,3,5-Trimethylbenze	ene	108-67-8	N.D.	0.5	2	1
10943	Xylene (Total)		1330-20-7	N.D.	0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Chrysene		218-01-9	N.D.	1	5	1
07805	Fluorene		86-73-7	N.D.	1	5	1
07805	Naphthalene		91-20-3	N.D.	1	5	1
07805	Phenanthrene		85-01-8	N.D.	1	5	1
07805	Pyrene		129-00-0	N.D.	1	5	1
GC Mis	scellaneous	SW-846	8011	ug/l	ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.	0.0095	0.028	1
Metals	s Dissolved	SW-846	6020	mg/l	mg/l	mg/l	
06035	Lead		7439-92-1	0.000072 J	0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals. Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality

Control Summary for overall QC performance data and associated samples.

CAT	Analysis Name	Method	Trial#	Batch#	Analysis		Analyst	Dilution
No.					Date and Ti	me		Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111194AA	04/30/2011	03:51	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111194AA	04/30/2011	03:51	Kevin A Sposito	1
07805	PAHs by 8270	SW-846 8270C	1	11119WAA026	05/02/2011	04:26	Linda M	1
							Hartenstine	
07807	BNA Water Extraction	SW-846 3510C	1	11119WAA026	04/30/2011	09:20	Joseph S Feister	1
07879	EDB in Wastewater	SW-846 8011	1	111220024A	05/04/2011	16:20	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111220024A	05/03/2011	10:15	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111226050002A	05/04/2011	12:25	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	111226050002	05/03/2011	08:53	Denise K Conners	1



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Sample Description: W-11 04262011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-11\_04262011

LLI Sample # WW 6271538 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/26/2011 13:20 by MH SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

#### A1011

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10943	Benzene		71-43-2	N.D.	0.5	1	1
10943	1,2-Dichloroethane		107-06-2	N.D.	0.5	1	1
10943	Ethylbenzene		100-41-4	N.D.	0.5	1	1
10943	Isopropylbenzene		98-82-8	N.D.	0.5	2	1
10943	Methyl Tertiary But	yl Ether	1634-04-4	N.D.	0.5	1	1
10943	Toluene		108-88-3	N.D.	0.5	1	1
10943	1,2,4-Trimethylbenze	ene	95-63-6	N.D.	0.5	2	1
10943	1,3,5-Trimethylbenze	ene	108-67-8	N.D.	0.5	2	1
10943	Xylene (Total)		1330-20-7	N.D.	0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Chrysene		218-01-9	N.D.	1	5	1
07805	Fluorene		86-73-7	N.D.	1	5	1
07805	Naphthalene		91-20-3	N.D.	1	5	1
07805	Phenanthrene		85-01-8	N.D.	1	5	1
07805	Pyrene		129-00-0	N.D.	1	5	1
GC Mis	scellaneous	SW-846	8011	ug/l	ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.	0.0094	0.028	1
Metals	s Dissolved	SW-846	6020	mg/l	mg/l	mg/l	
06035	Lead		7439-92-1	N.D.	0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals.

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tim	ne	Analyst	Dilution Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111194AA	04/30/2011	04:19	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111194AA	04/30/2011	04:19	Kevin A Sposito	1
07805	PAHs by 8270	SW-846 8270C	1	11119WAA026	05/02/2011	12:40	Linda M	1
							Hartenstine	
07807	BNA Water Extraction	SW-846 3510C	1	11119WAA026	04/30/2011	09:20	Joseph S Feister	1
07879	EDB in Wastewater	SW-846 8011	1	111240001A	05/04/2011	20:20	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111240001A	05/04/2011	11:10	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111236050002A	05/04/2011	16:48	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	111236050002	05/04/2011	09:00	Denise K Conners	1



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Sample Description: W-12 04262011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-12\_04262011

LLI Sample # WW 6271539 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/26/2011 13:55 by MH SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

#### A1012

CAT No.	Analysis Name		CAS Number	As Re Resul	ceived t	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l	ug/l	
10943	Benzene		71-43-2	8		0.5	1	1
10943	1,2-Dichloroethane		107-06-2	N.D.		0.5	1	1
10943	Ethylbenzene		100-41-4	3		0.5	1	1
10943	Isopropylbenzene		98-82-8	2		0.5	2	1
10943	Methyl Tertiary But	yl Ether	1634-04-4	N.D.		0.5	1	1
10943	Toluene		108-88-3	1		0.5	1	1
10943	1,2,4-Trimethylbenze	ene	95-63-6	4		0.5	2	1
10943	1,3,5-Trimethylbenze	ene	108-67-8	0.6	J	0.5	2	1
10943	Xylene (Total)		1330-20-7	10		0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l		ug/l	ug/l	
07805	Chrysene		218-01-9	1	J	1	5	1
07805	Fluorene		86-73-7	1	J	1	5	1
07805	Naphthalene		91-20-3	1	J	1	5	1
07805	Phenanthrene		85-01-8	N.D.		1	5	1
07805	Pyrene		129-00-0	2	J	1	5	1
GC Mis	scellaneous	SW-846	8011	ug/l		ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.		0.0095	0.029	1
Metals	s Dissolved	SW-846	6020	mg/l		mg/l	mg/l	
06035	Lead		7439-92-1	0.000	18 J	0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals. Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tim	ne	Analyst	Dilution Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111194AA	04/30/2011	04:47	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111194AA	04/30/2011	04:47	Kevin A Sposito	1
07805	PAHs by 8270	SW-846 8270C	1	11119WAA026	05/02/2011	13:04	Linda M	1
							Hartenstine	
07807	BNA Water Extraction	SW-846 3510C	1	11119WAA026	04/30/2011	09:20	Joseph S Feister	1
07879	EDB in Wastewater	SW-846 8011	1	111240001A	05/04/2011	21:20	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111240001A	05/04/2011	11:10	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111236050002A	05/04/2011	16:50	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	111236050002	05/04/2011	09:00	Denise K Conners	1



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Sample Description: W-13 04262011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-13\_04262011

LLI Sample # WW 6271540 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/26/2011 14:15 by MH SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

A1013

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10943	Benzene		71-43-2	N.D.	0.5	1	1
10943	1,2-Dichloroethane		107-06-2	N.D.	0.5	1	1
10943	Ethylbenzene		100-41-4	N.D.	0.5	1	1
10943	Isopropylbenzene		98-82-8	N.D.	0.5	2	1
10943	Methyl Tertiary But	yl Ether	1634-04-4	N.D.	0.5	1	1
10943	Toluene		108-88-3	N.D.	0.5	1	1
10943	1,2,4-Trimethylbenze	ene	95-63-6	N.D.	0.5	2	1
10943	1,3,5-Trimethylbenze	ene	108-67-8	N.D.	0.5	2	1
10943	Xylene (Total)		1330-20-7	N.D.	0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Chrysene		218-01-9	N.D.	1	5	1
07805	Fluorene		86-73-7	N.D.	1	5	1
07805	Naphthalene		91-20-3	N.D.	1	5	1
07805	Phenanthrene		85-01-8	N.D.	1	5	1
07805	Pyrene		129-00-0	N.D.	1	5	1
GC Mis	scellaneous	SW-846	8011	ug/l	ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.	0.0095	0.029	1
Metals	s Dissolved	SW-846	6020	mg/l	mg/l	mg/l	
06035	Lead		7439-92-1	N.D.	0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals.

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tir	me	Analyst	Dilution Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111194AA	04/30/2011	05:15	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111194AA	04/30/2011	05:15	Kevin A Sposito	1
07805	PAHs by 8270	SW-846 8270C	1	11119WAA026	05/02/2011	13:28	Linda M	1
							Hartenstine	
07807	BNA Water Extraction	SW-846 3510C	1	11119WAA026	04/30/2011	09:20	Joseph S Feister	1
07879	EDB in Wastewater	SW-846 8011	1	111240001A	05/04/2011	22:21	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111240001A	05/04/2011	11:10	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111236050002A	05/04/2011	16:52	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	111236050002	05/04/2011	09:00	Denise K Conners	1



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Sample Description: W-1D 04262011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-1D\_04262011

LLI Sample # WW 6271541 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/26/2011 10:45 by MH SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

#### A101D

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l	ug/l	ug/l	
10943	Benzene		71-43-2	N.D.	0.5	1	1
10943	1,2-Dichloroethane		107-06-2	N.D.	0.5	1	1
10943	Ethylbenzene		100-41-4	N.D.	0.5	1	1
10943	Isopropylbenzene		98-82-8	N.D.	0.5	2	1
10943	Methyl Tertiary But	yl Ether	1634-04-4	N.D.	0.5	1	1
10943	Toluene		108-88-3	0.8 J	0.5	1	1
10943	1,2,4-Trimethylbenze	ene	95-63-6	N.D.	0.5	2	1
10943	1,3,5-Trimethylbenze	ene	108-67-8	N.D.	0.5	2	1
10943	Xylene (Total)		1330-20-7	N.D.	0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l	ug/l	ug/l	
07805	Chrysene		218-01-9	N.D.	1	5	1
07805	Fluorene		86-73-7	N.D.	1	5	1
07805	Naphthalene		91-20-3	N.D.	1	5	1
07805	Phenanthrene		85-01-8	N.D.	1	5	1
07805	Pyrene		129-00-0	N.D.	1	5	1
GC Mis	scellaneous	SW-846	8011	ug/l	ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.	0.0095	0.028	1
Metals	s Dissolved	SW-846	6020	mg/l	mg/l	mg/l	
06035	Lead		7439-92-1	N.D.	0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals. Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tim	ıe.	Analyst	Dilution Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111194AA	04/30/2011	05:43	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111194AA	04/30/2011	05:43	Kevin A Sposito	1
07805	PAHs by 8270	SW-846 8270C	1	11119WAA026	05/02/2011	13:52	Linda M	1
							Hartenstine	
07807	BNA Water Extraction	SW-846 3510C	1	11119WAA026	04/30/2011	09:20	Joseph S Feister	1
07879	EDB in Wastewater	SW-846 8011	1	111240001A	05/04/2011	22:51	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111240001A	05/04/2011	11:10	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111236050002A	05/04/2011	16:54	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	111236050002	05/04/2011	09:00	Denise K Conners	1



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Sample Description: W-28 04262011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-28\_04262011

LLI Sample # WW 6271542 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/26/2011 12:10 by MH SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

#### A1028

CAT No.	Analysis Name		CAS Number	As Re Resul	ceived t	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l	ug/l	
10943	Benzene		71-43-2	0.5	J	0.5	1	1
10943	1,2-Dichloroethane		107-06-2	N.D.		0.5	1	1
10943	Ethylbenzene		100-41-4	N.D.		0.5	1	1
10943	Isopropylbenzene		98-82-8	23		0.5	2	1
10943	Methyl Tertiary But	yl Ether	1634-04-4	N.D.		0.5	1	1
10943	Toluene		108-88-3	0.8	J	0.5	1	1
10943	1,2,4-Trimethylbenze	ene	95-63-6	1	J	0.5	2	1
10943	1,3,5-Trimethylbenze	ene	108-67-8	N.D.		0.5	2	1
10943	Xylene (Total)		1330-20-7	1		0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l		ug/l	ug/l	
07805	Chrysene		218-01-9	2	J	1	5	1
07805	Fluorene		86-73-7	12		1	5	1
07805	Naphthalene		91-20-3	3	J	1	5	1
07805	Phenanthrene		85-01-8	21		1	5	1
07805	Pyrene		129-00-0	8		1	5	1
GC Mis	scellaneous	SW-846	8011	ug/l		ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.		0.0095	0.028	1
Metals	s Dissolved	SW-846	6020	mg/l		mg/l	mg/l	
06035	Lead		7439-92-1	0.000	19 J	0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals.

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	•	Analyst	Dilution Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111194AA	04/30/2011 0	6:11	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111194AA	04/30/2011 0	6:11	Kevin A Sposito	1
07805	PAHs by 8270	SW-846 8270C	1	11119WAA026	05/02/2011 1	4:17	Linda M	1
							Hartenstine	
07807	BNA Water Extraction	SW-846 3510C	1	11119WAA026	04/30/2011 0	9:20	Joseph S Feister	1
07879	EDB in Wastewater	SW-846 8011	1	111240001A	05/04/2011 2	23:21	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111240001A	05/04/2011 1	1:10	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111236050002A	05/04/2011 1	6:56	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	111236050002	05/04/2011 0	9:00	Denise K Conners	1



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Sample Description: W-29 04262011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-29\_04262011

LLI Sample # WW 6271543 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/26/2011 11:05 by MH SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

#### A1029

CAT No.	Analysis Name		CAS Number	As Rec Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l	ug/l	
10943	Benzene		71-43-2	N.D.		0.5	1	1
10943	1,2-Dichloroethane		107-06-2	N.D.		0.5	1	1
10943	Ethylbenzene		100-41-4	N.D.		0.5	1	1
10943	Isopropylbenzene		98-82-8	N.D.		0.5	2	1
10943	Methyl Tertiary But	yl Ether	1634-04-4	0.6	J	0.5	1	1
10943	Toluene		108-88-3	N.D.		0.5	1	1
10943	1,2,4-Trimethylbenze	ene	95-63-6	N.D.		0.5	2	1
10943	1,3,5-Trimethylbenze	ene	108-67-8	N.D.		0.5	2	1
10943	Xylene (Total)		1330-20-7	N.D.		0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l		ug/l	ug/l	
07805	Chrysene		218-01-9	N.D.		0.9	5	1
07805	Fluorene		86-73-7	1	J	0.9	5	1
07805	Naphthalene		91-20-3	N.D.		0.9	5	1
07805	Phenanthrene		85-01-8	2	J	0.9	5	1
07805	Pyrene		129-00-0	N.D.		0.9	5	1
GC Mis	scellaneous	SW-846	8011	ug/l		ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.		0.0094	0.028	1
Metals	s Dissolved	SW-846	6020	mg/l		mg/l	mg/l	
06035	Lead		7439-92-1	N.D.		0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals.

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tim	ne	Analyst	Dilution Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111194AA	04/30/2011	06:39	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111194AA	04/30/2011	06:39	Kevin A Sposito	1
07805	PAHs by 8270	SW-846 8270C	1	11119WAA026	05/02/2011	14:41	Linda M	1
							Hartenstine	
07807	BNA Water Extraction	SW-846 3510C	1	11119WAA026	04/30/2011	09:20	Joseph S Feister	1
07879	EDB in Wastewater	SW-846 8011	1	111240001A	05/04/2011	23:51	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111240001A	05/04/2011	11:10	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111236050002A	05/04/2011	16:57	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	111236050002	05/04/2011	09:00	Denise K Conners	1



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Sample Description: W-31 04262011 Grab Water

Philadelphia Refinery AOI-10 COC: 238116 W-31\_04262011

LLI Sample # WW 6271544 LLI Group # 1244429 Account # 10132

Project Name: SUN: Philadelphia Refinery AOI-10

Collected: 04/26/2011 15:15 by MH SUN: Aquaterra Tech.

PO Box 744

West Chester PA 19381

Submitted: 04/28/2011 16:55 Reported: 05/10/2011 10:53

A1031

CAT No.	Analysis Name		CAS Number	As Re Resul	ceived t	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	ug/l		ug/l	ug/l	
10943	Benzene		71-43-2	10		0.5	1	1
10943	1,2-Dichloroethane		107-06-2	N.D.		0.5	1	1
10943	Ethylbenzene		100-41-4	5		0.5	1	1
10943	Isopropylbenzene		98-82-8	9		0.5	2	1
10943	Methyl Tertiary Buty	yl Ether	1634-04-4	N.D.		0.5	1	1
10943	Toluene		108-88-3	4		0.5	1	1
10943	1,2,4-Trimethylbenze	ene	95-63-6	28		0.5	2	1
10943	1,3,5-Trimethylbenze	ene	108-67-8	9		0.5	2	1
10943	Xylene (Total)		1330-20-7	21		0.5	1	1
GC/MS	Semivolatiles	SW-846	8270C	ug/l		ug/l	ug/l	
07805	Chrysene		218-01-9	4	J	1	5	1
07805	Fluorene		86-73-7	5	J	1	5	1
07805	Naphthalene		91-20-3	13		1	5	1
07805	Phenanthrene		85-01-8	17		1	5	1
07805	Pyrene		129-00-0	9		1	5	1
GC Mis	scellaneous	SW-846	8011	ug/l		ug/l	ug/l	
07879	Ethylene dibromide		106-93-4	N.D.		0.0095	0.028	1
Metals	s Dissolved	SW-846	6020	mg/l		mg/l	mg/l	
06035	Lead		7439-92-1	0.006	0	0.000052	0.0010	1

#### General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12 This sample was filtered in the lab for dissolved metals.

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Tir	ne	Analyst	Dilution Factor
10943	BTEX/MTBE/Cumene/EDC/TMBs	SW-846 8260B	1	P111194AA	04/30/2011	07:06	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P111194AA	04/30/2011	07:06	Kevin A Sposito	1
07805	PAHs by 8270	SW-846 8270C	1	11119WAA026	05/02/2011	15:05	Linda M	1
							Hartenstine	
07807	BNA Water Extraction	SW-846 3510C	1	11119WAA026	04/30/2011	09:20	Joseph S Feister	1
07879	EDB in Wastewater	SW-846 8011	1	111240001A	05/05/2011	00:21	Tyler O Griffin	1
07786	EDB Extraction	SW-846 8011	1	111240001A	05/04/2011	11:10	Edwin Ortiz	1
06035	Lead	SW-846 6020	1	111236050002A	05/04/2011	16:59	Choon Y Tian	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	111236050002	05/04/2011	09:00	Denise K Conners	1



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### Quality Control Summary

Client Name: SUN: Aquaterra Tech. Group Number: 1244429

Reported: 05/10/11 at 10:53 AM

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

### Laboratory Compliance Quality Control

Analysis Name	Blank <u>Result</u>	Blank MDL**	Blank <u>LOQ</u>	Report <u>Units</u>	LCS %REC	LCSD %REC	LCS/LCSD <u>Limits</u>	RPD	RPD Max
Batch number: D111232AA	Sample numb	per(s): 62	71526						
Benzene	N.D.	0.5	1	uq/l	95		79-120		
1,2-Dichloroethane	N.D.	0.5	1	uq/1	96		70-130		
Ethylbenzene	N.D.	0.5	1	uq/l	95		79-120		
Isopropylbenzene	N.D.	0.5	2	uq/l	95		77-120		
Methyl Tertiary Butyl Ether	N.D.	0.5	1	uq/l	91		76-120		
Toluene	N.D.	0.5	1	uq/l	97		79-120		
1,2,4-Trimethylbenzene	N.D.	0.5	2	uq/l	92		74-120		
1,3,5-Trimethylbenzene	N.D.	0.5	2	ug/1	94		75-120		
Xylene (Total)	N.D.	0.5	1	uq/l	96		80-120		
Nylene (local)	11.2.	0.5	-	ug/ 1	50		00 120		
Batch number: P111193AA	Sample numb	per(s): 62	71518-627	1523					
Benzene	N.D.	0.5	1	ug/l	93	93	79-120	0	30
1,2-Dichloroethane	N.D.	0.5	1	ug/l	75	75	70-130	1	30
Ethylbenzene	N.D.	0.5	1	ug/l	89	88	79-120	2	30
Isopropylbenzene	N.D.	0.5	2	ug/l	86	86	77-120	1	30
Methyl Tertiary Butyl Ether	N.D.	0.5	1	ug/l	99	100	76-120	1	30
Toluene	N.D.	0.5	1	ug/l	91	89	79-120	2	30
1,2,4-Trimethylbenzene	N.D.	0.5	2	ug/l	90	89	74-120	1	30
1,3,5-Trimethylbenzene	N.D.	0.5	2	ug/l	91	91	75-120	0	30
Xylene (Total)	N.D.	0.5	1	ug/l	88	87	80-120	2	30
	_ , ,	( )							
Batch number: P111194AA	-			1525,6271527					
Benzene	N.D.	0.5	1	ug/l	98	98	79-120	0	30
1,2-Dichloroethane	N.D.	0.5	1	ug/l	78	78	70-130	0	30
Ethylbenzene	N.D.	0.5	1	ug/l	94	94	79-120	1	30
Isopropylbenzene	N.D.	0.5	2	ug/l	92	92	77-120	0	30
Methyl Tertiary Butyl Ether	N.D.	0.5	1	ug/l	99	97	76-120	2	30
Toluene	N.D.	0.5	1	ug/l	96	97	79-120	1	30
1,2,4-Trimethylbenzene	N.D.	0.5	2	ug/l	94	95	74-120	1	30
1,3,5-Trimethylbenzene	N.D.	0.5	2	ug/l	96	99	75-120	3	30
Xylene (Total)	N.D.	0.5	1	ug/l	93	93	80-120	0	30
Batch number: P111262AA	Sample numb	or(a). 63	71520 627	1 5 2 1					
Benzene	N.D.	0.5	1	uq/l	97	98	79-120	2	30
1,2-Dichloroethane	N.D.	0.5	1	ug/l	80	80	70-120	1	30
Ethylbenzene	N.D.	0.5	1	ug/l	93	93	79-130	1	30
Isopropylbenzene	N.D.	0.5	2	ug/1 ug/1	91	90	77-120	1	30
Methyl Tertiary Butyl Ether	N.D.	0.5	1	ug/l	100	101	76-120	1	30
Toluene	N.D.	0.5	1	ug/l ug/l	95	94	79-120	1	30
1,2,4-Trimethylbenzene	N.D.	0.5	2	ug/1 ug/1	92	91	74-120	1	30
· · · ·			2	J,	95	93		3	30
1,3,5-Trimethylbenzene	N.D.	0.5	1	ug/l		93 91	75-120	2	
Xylene (Total)	N.D.	0.5	Τ.	ug/l	92	ЭI	80-120	۷	30
Batch number: 11119WAA026	Sample numb	per(s): 62	71518-627	1521,6271529	9-62715	44			
Chrysene	N.D.	1.	5	uq/1	96	94	82-112	2	30
Fluorene	N.D.	1.	5	ug/l	97	94	82-113	3	30

<sup>\*-</sup> Outside of specification

<sup>\*\*-</sup>This limit was used in the evaluation of the final result for the blank

<sup>(1)</sup> The result for one or both determinations was less than five times the LOQ.

<sup>(2)</sup> The unspiked result was more than four times the spike added.



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### Quality Control Summary

Client Name: SUN: Aquaterra Tech. Group Number: 1244429

Reported: 05/10/11 at 10:53 AM

Analysis Name Naphthalene Phenanthrene Pyrene	Blank Result N.D. N.D. N.D.	Blank <u>MDL**</u> 1. 1.	<b>Blank</b> <u>LOO</u> 5 5 5	Report <u>Units</u> ug/l ug/l ug/l	LCS %REC 92 98 99	<b>LCSD %REC</b> 94 95 94	LCS/LCSD Limits 77-107 83-112 80-115	RPD 2 3 5	RPD Max 30 30 30
Batch number: 11120WAF026 Chrysene Fluorene Naphthalene Phenanthrene Pyrene	Sample num N.D. N.D. N.D. N.D. N.D.	per(s): 62 1. 1. 1. 1.	271522-627 5 5 5 5 5 5	1524,6271526 ug/l ug/l ug/l ug/l ug/l	5-62715 97 99 94 97 97	28 94 98 95 97 98	82-112 82-113 77-107 83-112 80-115	3 1 0 0	30 30 30 30 30
Batch number: 11124WAB026 Chrysene Fluorene Naphthalene Phenanthrene Pyrene	Sample num N.D. N.D. N.D. N.D. N.D.	ber(s): 62 1. 1. 1. 1.	271525 5 5 5 5 5 5	ug/l ug/l ug/l ug/l ug/l	95 97 93 94 99	97 97 95 97 101	82-112 82-113 77-107 83-112 80-115	3 1 3 4 3	30 30 30 30 30
Batch number: 111220024A Ethylene dibromide	Sample numi N.D.	per(s): 62 0.010	271518-627 0.030	1537 ug/l	96	96	60-140	0	20
Batch number: 111240001A Ethylene dibromide	Sample numi N.D.	oer(s): 62 0.010	271538-627 0.030	1544 ug/l	96	96	60-140	0	20
Batch number: 111226050002A Lead	Sample numi	oer(s): 62 0.00005 2	271518-627 0.0010	1537 mg/l	101		90-115		
Batch number: 111236050002A Lead	Sample numi N.D.	per(s): 62 0.00005 2	271538-627 0.0010	1544 mg/l	102		90-115		

#### Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS <u>%REC</u>	MSD %REC	MS/MSD Limits	RPD	RPD <u>MAX</u>	BKG Conc	DUP <u>Conc</u>	DUP RPD	Dup RPD Max
Batch number: D111232AA	Sample	number(s)	: 6271526	UNSPK:	P27273	33			
Benzene	95	88	80-126	6	30				
1,2-Dichloroethane	96	87	66-141	10	30				
Ethylbenzene	97	92	71-134	5	30				
Isopropylbenzene	102	96	75-128	6	30				
Methyl Tertiary Butyl Ether	93	85	72-126	9	30				
Toluene	104	96	80-125	8	30				
1,2,4-Trimethylbenzene	89	85	72-130	2	30				
1,3,5-Trimethylbenzene	104	95	72-131	7	30				
Xylene (Total)	85	84	79-125	0	30				
Batch number: 111220024A	Sample	number(s)	: 6271518	-627153	7 UNSP	K: 6271518	BKG: 6271519	)	
Ethylene dibromide	74		65-135			N.D.	N.D.	0 (1)	30
Batch number: 111240001A	Sample	number(s)	: 6271538	-627154	4 UNSPI	K: 6271538	BKG: 6271539	)	

#### \*- Outside of specification

- \*\*-This limit was used in the evaluation of the final result for the blank
- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.



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### Quality Control Summary

Client Name: SUN: Aquaterra Tech. Group Number: 1244429

Reported: 05/10/11 at 10:53 AM

#### Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike Background (BKG) = the sample used in conjunction with the duplicate

<u>Analysis Name</u> Ethylene dibromide	MS <u>%REC</u> 77	MSD %REC	MS/MSD Limits 65-135	<u>RPD</u>	RPD <u>MAX</u>	BKG Conc N.D.	DUP <u>Conc</u> N.D.	<b>DUP</b> <u>RPD</u> 0 (1)	Dup RPD Max 30
Batch number: 111226050002A Lead	Sample 103	number(s)					7 BKG: 627153 2 J 0.000057		20
Batch number: 111236050002A Lead	Sample	number(s)					5 BKG: P27207		20

#### Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: UST BTEX, MTBE in Water

Batch number: D111232AA

Batch nu	mber: D111232AA				
	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene	
6271526	90	94	100	99	
Blank	92	96	100	98	
LCS	91	97	100	105	
MS	89	99	101	105	
MSD	91	98	102	107	
Limits:	80-116	77-113	80-113	78-113	
	Name: UST BTEX,	MTBE in Water			
Batch nu	mber: P111193AA				
	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene	
6271518	96	96	99	91	
6271519	94	97	99	94	
6271520	95	96	98	90	
6271521	95	97	99	90	
6271522	95	98	98	89	
6271523	96	98	98	92	
Blank	94	95	99	90	
LCS	94	99	98	92	
LCSD	96	97	97	92	
Limits:	80-116	77-113	80-113	78-113	
	Name: UST BTEX,	MTBE in Water			
Batch nu	mber: P111194AA				
	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene	
6271524	93	97	93	92	
6271525	95	94	96	93	
6271527	94	96	94	90	
6271528	93	94	95	91	
6271530	93	95	95	91	

<sup>\*-</sup> Outside of specification

- \*\*-This limit was used in the evaluation of the final result for the blank
- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.



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### Quality Control Summary

Client Reporte	Name: SUN: Aqued: 05/10/11 at	uaterra Tech. t 10:53 AM		G	roup Number:	1244429
			Surrogate	Quality	Control	
6271532	94	95	95	91		
6271533	95	96	94	91		
6271534	93	97	94	90		
6271535	93	97	95	89		
6271536	93	94	96	89		
6271537	94	95	94	89		
6271538	94	96	95	89		
6271539	93	94	94	91		
6271540	94	98	94	90		
6271541	93	97	95	88		
6271542	93	94	93	91		
6271543	94	94	95	92		
6271544	94	95	94	93		
Blank	94	97	95	90		
LCS	94	97	94	91		
LCSD	93	97	94	90		
Limits:	80-116	77-113	80-113	78-113		
Analysis	Name: UST BTEX, N	MTBE in Water				
	mber: P111262AA					
	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluor	obenzene	
		,				
6271529	94	98	93	90		
6271531	95	95	92	88		
Blank	95	100	93	91		
LCS	93	96	92	91		
LCSD	94	97	94	91		
<del></del>	00.116					
Limits:	80-116	77-113	80-113	78-113		
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	mber: 11119WAA026	2-Fluorohinhenyl	Ternhenyl-d14			
	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14			
6271518	Nitrobenzene-d5					
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6271519	Nitrobenzene-d5	97 94	95 94			
6271519 6271520	Nitrobenzene-d5  102 97 102	97 94 97	95 94 95			
6271519 6271520 6271521	Nitrobenzene-d5 102 97 102 98	97 94 97 94	95 94 95 92			
6271519 6271520 6271521 6271529	Nitrobenzene-d5  102 97 102 98 99	97 94 97 94 93	95 94 95 92 92			
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<sup>\*-</sup> Outside of specification

<sup>\*\*-</sup>This limit was used in the evaluation of the final result for the blank

<sup>(1)</sup> The result for one or both determinations was less than five times the LOQ.

<sup>(2)</sup> The unspiked result was more than four times the spike added.



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Page 5 of 6

### Quality Control Summary

Client Name: SUN: Aquaterra Tech. Group Number: 1244429

34-118

Reported: 05/10/11 at 10:53 AM

63-114

Limits: 52-120

#### Surrogate Quality Control

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14	
6271522	93	99	89	
6271523	96	95	90	
6271524	89	86	80	
6271526	94	97	89	
6271527	99	98	91	
6271528	95	99	94	
Blank	95	96	92	
LCS	96	99	95	
LCSD	95	99	96	
Limits:	52-120	63-114	34-118	
	Name: PAHs by			
Batch nur	mber: 11124WAB0			
	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14	
6271525	88	89	76	
Blank	94	94	87	
LCS	96	97	92	
LCSD	97	97	92	
Limits:	52-120	63-114	34-118	

Analysis Name: EDB in Wastewater Batch number: 111220024A

1,1,2,2-

Tetrachloroethane

5271518	./9
5271519	84
6271520	82
6271521	76
6271522	88
6271523	116
6271524	109
6271525	91
6271526	94
6271527	88
5271528	107
5271529	87
5271530	80
5271531	82
5271532	81
5271533	88
5271534	83
5271535	82
6271536	83
5271537	86
3lank	103
סוזר	94

- \*- Outside of specification
- \*\*-This limit was used in the evaluation of the final result for the blank
- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.



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Page 6 of 6

### Quality Control Summary

Client Name: SUN: Aquaterra Tech. Group Number: 1244429

Reported: 05/10/11 at 10:53 AM

#### Surrogate Quality Control

LCS 103 LCSD 102 MS 89

Limits: 46-136

Analysis Name: EDB in Wastewater

Batch number: 111240001A

1,1,2,2-

Tetrachloroethane

Limits: 46-136

<sup>\*-</sup> Outside of specification

<sup>\*\*-</sup>This limit was used in the evaluation of the final result for the blank

<sup>(1)</sup> The result for one or both determinations was less than five times the LOQ.

<sup>(2)</sup> The unspiked result was more than four times the spike added.



For Lancaster Laboratories use only

Acct. # 10132 Group#1244429 Sample #6271518-44

COC # 238116

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Project Name/#: PHILA REF AOT-	D PWSID	#:		_		Check if Applicable			<u> </u>				<del> </del>			Preservation C	odes Thiosulfate	
Project Manager: T. DOERR	P.O.#:_					S Che		Containers			}					N=HNO <sub>3</sub> B=	:NaOH =Other	<b>6</b>
Sampler: S.SYKES / m. HINC	Enth Quote #	ŧ		_		Potable NPDES		ıtair							<b> </b>	3-112504 0-	Other	nples Jested
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2)	Date	Time		I≘I	_	Water	Jer	tal#c	را									peratur receip
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W-20-04272011	4/27/11	910	X			X		8	X									
W-22_04272011	4/27/4	1040	X			X		8	$\times$								- <u>-</u> -	
W-23-04272011	4/27/11	1050	X			X		8	$\times$									
W-32 -04272011	4/27/11	1300	X			X		8	$\times$									
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Type IV (CLP SOW) Type VI (Raw Data Only)  ff yea indicate OC sample and sub-		o		Relii	nqui	ished	by:	\				Date	Time	Receive	d by:		( Z Date	Time



For Lancaster Laboratories use only

Acct. # 10132 Group# 1244429 Sample #6271518-44

COC # 241185

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									(;	5) A	nalyses	Reque	sted	FSC:		_
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Project Manager: T. DOERR	P.O.#: _			_	ď	App	5							N=HNO₃ B=NaOH		(6)
Sampler: 5. SYKES /m. HIWDERLING	Quote #	:			to h	NPDES	Containers							S=H <sub>2</sub> SO <sub>4</sub> O=Other	<del></del>	nples Lested)
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For Lancaster Laboratories use only

Acct. # 10132 Group# 1244429 Sample # 6271518-44

COC # 238118

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4 Lancaster

Acct. # 10132

For Lancaster Laboratories use only Group# 1244429 Sample # 6271518-44

COC #

232884

Client:   Acct. #:   Preservation Codes   SCR:	<b>Laboratories</b>	Please print. Instruc	ctions on reverse side c	orrespond with circle	d numbers.	Coolecten	O.9-3.6°C For Lab Use Only
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Project Name#: PM.U. Ref. HOT - 10 PWSID #:  Project Manager: T. Dec'' P.O.#:  Sampler: Mink Hinder(Ins) Quote #:  Name of state where samples were collected: PA  3	Client: Agostella	Acct. #:	Matrix 4	Pre	servation	Codes	
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# Table 1a Constituents of Concern for Groundwater AOI 10 Work Plan for Site Characterization Sunoco Philadelphia Refinery Philadelphia, Pennsylvania

METALS	CAS No.
Lead (dissolved)	7439-92-1

VOLATILE ORGANIC COMPOUNDS	CAS No.
1,2-Dichloroethane	107-06-2
1,2,4-Trimethylbenzene	95-63-6
1,3,5-Trimethylbenzene	108-67-8
Benzene	71-43-2
Cumene	98-82-8
Ethylbenzene	100-41-4
Ethylene dibromide	106-93-4
Methyl tertiary butyl ether	1634-04-4
Toluene	108-88-3
Xylenes (total)	1330-20-7

SEMI-VOLATILE ORGANIC COMPOUNDS	CAS No.
Chrysene	218-01-9
Fluorene	86-73-7
Naphthalene	91-20-3
Phenanthrene	85-01-8
Pyrene	129-00-0

#### Notes

<sup>1.</sup> Constituents are from Pennsylvania Corrective Action Process (CAP) Regulation
Amendments effective December 1, 2001; provided in Chapter VI, Section E (pgs. 29-30) of
PADEP Document, Closure Requirements for Underground Storage Tank Systems,
effective April 1, 1998 and the Merch 18, 2008 revised PADEP Petroleum Short List.

<sup>2.</sup> Select groundwater samples to be collected within the CAMU will be analyzed for full TCL VOCs, TCL SVOCs, and TAL metals.



### **Explanation of Symbols and Abbreviations**

The following defines common symbols and abbreviations used in reporting technical data:

RL N.D.	Reporting Limit none detected	BMQL MPN	Below Minimum Quantitation Level Most Probable Number
TNTC	Too Numerous To Count	CP Units	cobalt-chloroplatinate units
IU	International Units	NTU	nephelometric turbidity units
umhos/cm	micromhos/cm	ng	nanogram(s)
С	degrees Celsius	F	degrees Fahrenheit
meq	milliequivalents	lb.	pound(s)
g	gram(s)	kg	kilogram(s)
ug	microgram(s)	mg	milligram(s)
ml	milliliter(s)	I	liter(s)
m3	cubic meter(s)	ul	microliter(s)

- < less than The number following the sign is the <u>limit of quantitation</u>, the smallest amount of analyte which can be reliably determined using this specific test.
- > greater than
- J estimated value The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).
- ppm parts per million One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

Increasic Ovelitions

ppb parts per billion

**Dry weight**basis
Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

#### U.S. EPA CLP Data Qualifiers:

	Organic Qualifiers		Inorganic Qualifiers
Α	TIC is a possible aldol-condensation product	В	Value is <crdl, but="" th="" ≥idl<=""></crdl,>
В	Analyte was also detected in the blank	Ε	Estimated due to interference
С	Pesticide result confirmed by GC/MS	M	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	N	Spike sample not within control limits
Ε	Concentration exceeds the calibration range of	S	Method of standard additions (MSA) used
	the instrument		for calculation
N	Presumptive evidence of a compound (TICs only)	U	Compound was not detected
Р	Concentration difference between primary and	W	Post digestion spike out of control limits
	confirmation columns >25%	*	Duplicate analysis not within control limits
U	Compound was not detected	+	Correlation coefficient for MSA < 0.995
X,Y,Z	Defined in case narrative		

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

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Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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